

Serial No. 09/496,44
Group Art Unit: 1638

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)
2. (Previously Presented) The isolated nucleic acid of claim 64, wherein the polynucleotide is from a monocot.
3. (Original) The isolated nucleic acid of claim 2, wherein the polynucleotide is from maize.
4. (Previously presented) The isolated nucleic acid of claim 64, wherein the polynucleotide is from a dicot.
5. (Original) The isolated nucleic acid of claim 4, wherein the polynucleotide is from soybean.
6. (Previously Presented) The isolated nucleic acid of claim 64, wherein the polynucleotide has the sequence of SEQ ID NO: 1.
7. (Previously Presented) The isolated nucleic acid of claim 64, wherein the polynucleotide is DNA.
8. (Previously Presented) The isolated nucleic acid of claim 64, wherein the polynucleotide is RNA.

Serial No. 09/496,44
Group Art Unit: 1638

9. (Previously Presented) The isolated nucleic acid of claim 64 adducted to a second nucleic acid sequence encoding a DNA-binding domain.
10. (Previously Presented) A vector comprising at least one nucleic acid of claim 64.
11. (Previously Presented) A recombinant expression cassette comprising a nucleic acid of claim 64 operably linked to a promoter in sense or antisense orientation.
12. (Original) The recombinant expression cassette of claim 11, wherein the nucleic acid is operably linked in sense orientation to the promoter.
13. (Previously Presented) A non-human host cell containing the recombinant expression cassette of claim 11.
14. (Original) The host cell of claim 13 that is a procaryote or a plant cell.
15. (Original) The host cell of claim 14 that is a corn, soybean, sorghum, sunflower, safflower, wheat, rice, alfalfa or oil-seed *Brassica* cell.
16. (Currently Amended) A transgenic plant comprising at least one expression ~~cassette of claim 11~~ nucleic acid of claim 64.
17. (Original) The plant of claim 16 that is corn, soybean, sorghum, sunflower, safflower, wheat, rice, alfalfa or oil-seed *Brassica*.

Serial No. 09/496,44
Group Art Unit: 1638

18. (Currently Amended) A seed comprising ~~the expression cassette of claim 11~~
at least one nucleic acid of claim 64.
- 19-21. Cancelled
22. (Previously Presented) A ribonucleic acid sequence encoding a protein
having SEQ ID NO: 2.
23. (Currently Amended) A method of modulating the level of CycE protein in a
plant cell, comprising:
- (a) transforming a plant cell with ~~a recombinant expression cassette of~~
claim 11 at least one nucleic acid of claim 64;
 - (b) growing the plant cell under cell-growing conditions ~~for a time sufficient~~
~~to induce expression of the polynucleotide sufficient to modulate the~~
level of CycE protein in the cell compared to a corresponding non-
transformed plant cell.
24. (Currently Amended) The method of claim 23, wherein the level of CycE
protein is increased.
25. (Currently Amended) The method of claim 23, wherein the level of CycE
protein is decreased.
26. (Cancelled)
27. (Currently Amended) The method of claim 23, wherein the level of CycE
protein ~~is present in an amount sufficient to alter~~ alters cell division when
compared to cell division of a corresponding non-transformed plant cell.

Serial No. 09/496,44
Group Art Unit: 1638

28. (Currently Amended) The method of claim 23, wherein the level of CycE protein is ~~present in an amount sufficient to increase~~ increases the number of ~~dividing cells~~ rate of cell division when compared to rate of cell division of a corresponding non-transformed plant cell.
29. (Currently Amended) The method of claim 23, wherein the level of CycE protein is ~~present in an amount sufficient to improve~~ increases transformation frequencies when compared to transformation frequencies of a corresponding non-transformed plant cell.
30. (Currently Amended) The method of claim 23, wherein the level of CycE protein is ~~present in an amount sufficient to alter~~ alters cell growth when compared to cell growth of a corresponding non-transformed plant cell.
31. (Currently Amended) The method of claim 23, wherein the level of CycE protein is ~~present in an amount sufficient to provide a positive~~ increases cell size growth advantage for the cell when compared to cell size of a corresponding non-transformed plant cell.
32. (Currently Amended) The method of claim 23, wherein the level of CycE protein is ~~present in an amount sufficient to increase~~ increases the growth rate of the cell when compared to growth rate of a corresponding non-transformed plant cell.
33. (Currently Amended) The method of claim 23, wherein ~~the cell is a plant cell~~ and the plant cell is stably transformed with the at least one nucleic acid and is grown under conditions appropriate for regenerating a transformed plant ~~capable of expressing CycE protein.~~

Serial No. 09/496,44
Group Art Unit: 1638

34. (Original) The method of claim 33, wherein the plant cell is from corn, soybean, wheat, rice, alfalfa, sunflower, safflower, or canola.
35. (Currently Amended) The method of claim 33, wherein the ~~CycE~~ protein is ~~present in an amount sufficient to increase~~ transformed plant has increased crop yield when compared to a control plant.
36. (Currently Amended) The method of claim 33, wherein the ~~CycE~~ protein is ~~present in an amount sufficient to alter~~ transformed plant has increased plant height or size when compared to a control plant.
37. (Currently Amended) The method of claim 33, wherein the ~~CycE~~ protein is ~~present in an amount sufficient to enhance or inhibit~~ transformed plant has altered organ growth when compared to a control plant.
38. (Original) The method of claim 37, wherein the organ is a seed, root, shoot, ear, tassel, stalk, pollen, or stamen.
39. (Currently Amended) The method of claim 38, wherein the ~~level of CycE protein is modulated to produce~~ transformed plant has an increase in organ ablation when compared to a control plant.
40. (Currently Amended) The method of claim 38, wherein the ~~level of CycE protein is modulated to produce~~ transformed plant has an increase in parthenocarpic fruits when compared to a control plant.
41. (Currently Amended) The method of claim 38, wherein the ~~level of CycE protein is modulated to produce~~ transformed plant is male sterile plants.

Serial No. 09/496,44
Group Art Unit: 1638

42. (Currently Amended) The method of claim 33, wherein ~~the CycE protein is present in an amount sufficient to enhance~~ embryos from the transformed plant have an increase in embryogenic response when compared to embryos from a control plant that are cultured under the same conditions.
43. (Currently Amended) The method of claim 33, wherein ~~the CycE protein is present in an amount sufficient to increase~~ cells from the transformed plant have increased callus induction when compared to cells from a control plant.
44. (Currently Amended) The method of claim 33, wherein ~~the level of CycE protein is modulated to provide for~~ cells from the transformed plant have increased callus growth when compared to cells from a control plant, wherein positive selection for the cells from the transformed plant can be conducted.
45. (Currently Amended) The method of claim 33, wherein ~~the level of CycE protein is modulated to increase~~ cells from the transformed plant have increased plant regeneration when compared to cells from a control plant.
46. (Currently Amended) The method of claim 23, wherein the level of CycE protein is modulated to alter the percent of time that the ~~cells are~~ cell is arrested in G1 or G0 phase when compared to a corresponding non-transformed plant cell.
47. (Currently Amended) The method of claim 23, wherein the level of CycE protein is modulated to alter the amount of time the cell spends in a particular cell cycle when compared to a corresponding non-transformed plant cell.

Serial No. 09/496,44
Group Art Unit: 1638

48. (Currently Amended) The method of claim 23, wherein the level of CycE protein is modulated to ~~improve~~ increase the response viability of the cells cell to when placed under environmental stress including dehydration, heat, or cold when compared to a corresponding non-transformed plant cell placed under the same stress.
49. (Currently Amended) The method of claim 33, wherein the ~~level of CycE protein is modulated to~~ transformed plant has an increase in the number of pods per plant when compared to a control plant.
50. (Currently Amended) The method of claim 33, wherein the ~~level of CycE protein is modulated to~~ transformed plant has an increase in the number of seeds per pod or ear when compared to a control plant.
51. (Currently Amended) The method of claim 33, wherein the ~~level of CycE protein is modulated to alter the~~ transformed plant has an altered lag time in seed development when compared to a control plant.
52. (Currently Amended) The method of claim 33, wherein the ~~level of CycE protein is modulated to provide~~ transformed plant has hormone independent cell growth when compared to a control plant.
53. (Currently Amended) The method of claim 23, wherein the level of CycE protein is modulated to increase the growth rate of cells the cell in bioreactors when compared to a corresponding non-transformed plant cell.
- 54-63. (Cancelled)

Serial No. 09/496,44
Group Art Unit 1638

64. (Currently Amended) An isolated nucleic acid ~~capable of modulating~~ that modulates the level of Cyclin E protein in a cell, wherein the level of Cyclin E protein is compared to a corresponding cell not containing the isolated nucleic acid, and wherein the isolated nucleic acid comprises a member selected from the group consisting of:
- (a) a polynucleotide that encodes a polypeptide of SEQ ID NO: 2;
 - (b) a plant Cyclin E polynucleotide having at least 80% identity to the entire coding region of SEQ ID NO: 1, wherein the % identity is determined by GCG/bestfit GAP 10 program using a gap creation penalty of 50 and a gap extension penalty of 3;
 - (c) a polynucleotide having the sequence set forth in SEQ ID NO: 1; and
 - (d) a polynucleotide fully complementary to a polynucleotide of (a) through (c).
65. (Previously presented) An isolated nucleic acid encoding a protein having Cyclin E activity, wherein the nucleic acid comprises a polynucleotide that encodes a polypeptide of SEQ ID NO: 2.
66. (Currently Amended) An isolated nucleic acid ~~capable of modulating~~ that modulates the level of Cyclin E protein in a cell when compared to a corresponding cell that does not contain the isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide having at least 80% identity to the entire coding region of SEQ ID NO: 1, wherein the % identity is determined by GCG/bestfit GAP 10 program using default parameters.
- 67-69. (Cancelled).

Serial No. 09/496,44
Group Art Unit: 1638

70. (Currently Amended) An isolated nucleic acid ~~capable of modulating that~~ modulates the level of Cyclin E protein in a cell when compared to a corresponding cell that does not contain the isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide having the sequence set forth in SEQ ID NO: 1.
71. (Currently Amended) An isolated nucleic acid ~~capable of modulating that~~ modulates the level of Cyclin E protein in a cell when compared to the level of Cyclin E in a corresponding cell that does not contain the isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide fully complementary to at least 80% of the entire coding region of SEQ ID NO: 1, wherein the % identity is determined by GCG/bestfit GAP 10 program using default parameters.
- 72-74. (Cancelled)
75. (Currently Amended) An isolated nucleic acid ~~capable of modulating that~~ modulates the level of Cyclin E protein in a cell when compared to the level of Cyclin E in a corresponding cell that does not contain the isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide fully complementary to the sequence set forth in SEQ ID NO: 1.
76. (New) An isolated nucleic acid that modulates the level of Cyclin E protein in a cell when compared to a corresponding cell that does not contain said isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide having at least 85% identity to the entire coding region of SEQ ID NO: 1, wherein the % identity is determined by GCG/bestfit GAP 10 program using default parameters.

Serial No. 09/496,44
Group Art Unit: 1638

77. (New) An isolated nucleic acid that modulates the level of Cyclin E protein in a cell when compared to a corresponding cell that does not contain said isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide having at least 90% identity to the entire coding region of SEQ ID NO: 1, wherein the % identity is determined by GCG/bestfit GAP 10 program using default parameters.
78. (New) An isolated nucleic acid that modulates the level of Cyclin E protein in a cell when compared to a corresponding cell that does not contain said isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide having at least 95% identity to the entire coding region of SEQ ID NO: 1, wherein the % identity is determined by GCG/bestfit GAP 10 program using default parameters.
79. (New) An isolated nucleic acid that modulates the level of Cyclin E protein in a cell when compared to the level of Cyclin E in a corresponding cell that does not contain the isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide fully complementary to at least 85% of the entire coding region of SEQ ID NO: 1, wherein the % identity is determined by GCG/bestfit GAP 10 program using default parameters.
80. (New) An isolated nucleic acid that modulates the level of Cyclin E protein in a cell when compared to the level of Cyclin E in a corresponding cell that does not contain the isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide fully complementary to at least 90% of the entire coding region of SEQ ID NO: 1, wherein the % identity is determined by GCG/bestfit GAP 10 program using default parameters.

Serial No. 09/496,44
Group Art Unit: 1638

81. (New) An isolated nucleic acid that modulates the level of Cyclin E protein in a cell when compared to the level of Cyclin E in a corresponding cell that does not contain the isolated nucleic acid, wherein the nucleic acid comprises a polynucleotide fully complementary to at least 95% of the entire coding region of SEQ ID NO: 1, wherein the % identity is determined by GCG/bestfit GAP 10 program using default parameters.